

Docket No.: T2153-906758

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: :  
Marc HERRMANN et al. : Group Art Unit:  
Serial No.: 09/736,304 : Examiner:  
Filed: December 15, 2000 :  
For: SCALABLE MONITORING :  
METHOD AND DEVICE :  
McLean, Virginia  
April 9, 2001

**PRELIMINARY AMENDMENT**

Honorable Commissioner of Patents and Trademarks  
Washington DC 20231

Sir:

Please amend the subject application, filed concurrently herewith, as indicated  
below:

**IN THE SPECIFICATION:**

After the title and before the first paragraph on page 1, insert the following  
heading at the left-hand margin:

--CROSS REFERENCE TO RELATED APPLICATION--

insert the following new paragraph at the left-hand margin:

--The subject matter of this invention is related to application Serial No.  
09/737,919, corresponding to French Application 99/15892 (BULL 3866 - T2153-  
906756) filed concurrently herewith in the named Mark Herrmann and Xiabo Li and  
entitled "Method and Device for Deploying A Distributed Monitoring". The subject  
matter of said application is hereby incorporated by reference.--;

Page 1, line 1, before the paragraph beginning "The present invention..."

insert the following heading at the left-hand margin:

--FIELD OF THE INVENTION--;

Delete the paragraph beginning on Page 1, line 3, with "The present invention..." and substitute the following new paragraph:

--The present invention relates to a method and device for the scalable monitoring of a running computer system. The computer system is constituted by a set of computer equipment units called distributed resources, each being interconnected to the others through a communication network.--

Page 1, line 6, before the paragraph beginning "Large companies have..."

insert the following heading at the left-hand margin:

--DESCRIPTION OF RELATED ART--;

Delete the paragraph beginning on Page 1, line 23, with "Traditionally, this monitoring..." and substitute the following new paragraph:

--Traditionally, this monitoring is performed by the manager, which centralizes the acquisition of the measurements and the calculation of the indicators. The information exchanged between the manager and the resources flows through a wide area network, also called a "WAN." However, the cost of bandwidth in the WAN is not adapted to monitoring. Likewise, the exchanges of information involved in centralized monitoring generate heavy usage of the WAN. This problem is explained by the fact that the bandwidth of the WAN is too small for the ever-increasing amount of information that must pass between the managers and their equipment. - -

Page 1, line 30, after the sentence ending "and their equipment..." in the inserted paragraph and insert a paragraph indentation and the following heading at the left-hand margin:

--SUMMARY OF THE INVENTION--;

Insert the following new paragraph on Page 1, line 31 after the heading "SUMMARY OF THE INVENTION":

-- The object of the present invention is to eliminate the drawbacks of the prior art by offering a scalable monitoring method that makes it easy to reorganize the architecture of the computer system when it changes.--

Delete the paragraph beginning on Page 2, line 7, with " - a step for breaking . . ." and substitute the following new paragraph:

-- - a step for breaking down the monitored domain or organizing a plurality of into monitored subdomains (d1, d2) comprising a predetermined maximum number of resources, (A1, A2, B1, B2)--

Page 5, line 1, after the sentence beginning "Other characteristics and..." insert a paragraph indentation and the following heading at the left-hand margin:

-- BRIEF DESCRIPTION OF THE DRAWINGS--;

Delete the paragraph beginning on Page 5, line 7, with " -Fig. 2 represents . . ." and substitute the following new paragraph:

-- - Fig. 2 represents an exemplary architecture of the links between monitoring agents according to the method of the invention; and--

Delete the paragraph beginning on Page 5, line 8, with "- Fig. 3 represents . . ." and substitute the following new paragraph:

-- - Fig. 3 represents the process for deploying a monitoring method according to the invention. --

Page 5, line 9, before the sentence beginning "As explained above..." insert a paragraph indentation and the following heading at the left-hand margin:

--DESCRIPTION OF THE INVENTIVE EMBODIMENTS--;

Delete the paragraph beginning on Page 5, line 9, with " As explained above . . ." and substitute with the following new paragraph:

--As explained above, a computer system (1) comprises at least one local area network (LAN) (10, 20) that communicates with a central system (2) or manager through a wide area network (3). Each local area network (10, 20) comprises at least one unit of computer equipment (101, 102, 201, 202) called a resource.--

Delete the paragraph beginning on Page 7, line 27, with " Each indicator agent . . ." has been deleted, substitute with the following new paragraph:

--Each indicator agent manages a so-called subscriber list on which the names of other indicator agents according to the invention may be written. This list is stored in the storage means or memory of the computer equipment unit associated with the indicator agent, for example in the form of a table (1010, 2010). An indicator agent  $A_1$  is written on this list by sending a specific so-called subscription notification "Subscribe (id( $A_1$ ) Management Information ( $A_1$ ))" to another indicator agent  $B_1$ , which calculates the indicator ( $I_{B_1}$ ). This notification includes as parameters a piece of so-called management information that allows the sending agent to create an association between a propagation of a value modification and the other indicator agent ( $B_1$ ), and the identifier id( $A_1$ ). Upon receiving a subscription notification, the destination agent ( $B_1$ ) processes the notification by writing into the subscriber table (2010) the identifier (Id $A_1$ ) of the sending agent as well as the management

information (Management Information ( $A_1$ )) on the list. This list is consulted by the indicator agent ( $B_1$ ) that manages it, after the evaluation of the indicator ( $I_{B1}$ ) by the agent ( $B_1$ ). If the new value of the indicator is different from the value previously evaluated and stored by the agent, then the agent sends each agent written on the subscriber list (2010) and identified by the parameter ( $id(A_1)$ ) a value change notification (ValueChanged) comprising the new value ( $Val(I_{B1})$ ) of the indicator ( $I_{B1}$ ). To do this, after the evaluation of the indicator ( $I_{B1}$ ), a comparison module of the indicator agent ( $B_1$ ) compares the new value of the indicator ( $Val(I_{B1})$ ) to the value previously calculated ( $Valp(I_{B1})$ ) and stored. If the two values are different, the comparison module activates a procedure for sending the value change notification (ValueChanged) to all of the agents, for example A, written on the subscriber list (2010) then records the new value of the indicator in the storage means of its computer equipment unit. The value change notification comprises as parameters the new value of the indicator ( $Val(I_{B1})$ ) and the management information (Management Information ( $A_1$ )) of the target agent, so that the target agent can assign the value received to the indicator awaited.--

Delete the paragraph beginning on Page 18, line 23, with "It should be clear . . . "and substitute the following new paragraph:

-- It should be clear to those skilled in the art that the present invention allows for embodiments in many other specific forms without going beyond the scope of application of the invention as claimed. Consequently, the present embodiments should be considered as examples which can be modified within the range defined by the true spirit and scope of the invention as set forth in the attached claims to which resort should be made for a full and complete understanding of the full scope of the invention.--

**IN THE CLAIMS:**

Please cancel claims 1 - 12 in their entirety and without prejudice and substitute the following new claims:

1           --13. A method for scalable monitoring of a computer system comprising a  
2 plurality of computer units constituting hardware resources to be monitored forming a  
3 monitored domain, and a manager comprising a central computer system connected to  
4 a communication network that allows transfer of information between at least one of  
5 the resources and the manager, said resources including memories and having  
6 installed therein indicator agents, the method being characterized in that it comprises:

7           - a step for organizing the monitored domain into a plurality of monitored  
8 subdomains (d1, d2) comprising a predetermined maximum number of resources (A1,  
9 A2, B1, B2),

10           - a step for automatically creating and configuring, for each subdomain, an  
11 information synthesis node comprising at least one synthesis agent stored in a  
12 memory of a resource, calculating and storing indicator values in the memory of at  
13 least one resource, synthesizing by each synthesizing agent said stored indicator  
14 values to define corresponding indicators, said indicators representing an operational  
15 status of the resources of a subdomain, evaluating said indicators by indicator agents  
16 of said resources, each indicator agent being uniquely identified by the name of the  
17 indicator the indicator agent calculates and by the subdomain in which said indicator  
18 agent is installed and being associated with each synthesis agent using the  
19 corresponding indicator value, and

20           - a step for modifying the associations between the synthesis agents and the  
21 indicator agents when a predetermined maximum number of resources in a subdomain  
22 is reached, in order to accommodate the addition or deletion of indicators so that the

monitored domain comprises a new architecture having, in each subdomain, a number of resources lower than the predetermined maximum number of resources.

14. A method for scalable monitoring of a computer system according to claim 13, characterized in that the step for configuring an information synthesis node comprises, for each synthesis agent:

- a step for searching, in a table stored in the memory of a resource, for the name of the indicator agent or agents required to calculate the indicator of the synthesis agent, and

- a step for subscribing the synthesis agent to the indicator agents identified during the search step, said subscription step allowing each synthesis agent to automatically receive, in a corresponding subscription table stored in the storage means of a resource, the new values of the indicators found.

15. A method for scalable monitoring of a computer system according to claim 14, characterized in that the step for searching comprises:

- a step for the sending notification by the synthesis agent to a naming service dedicated to storing the associations between a subdomain name, an indicator agent and an indicator, said notification comprising the name of a given subdomain and a given indicator.

16. A method for scalable monitoring of a computer system according to claim 13, characterized in that the step for modification of associations comprises:

- a step for installing at least one indicator agent in each new resource added to a subdomain,



5           - a step for sending, to the synthesis agents requiring the value of the indicator  
6 of the new indicator agent or agents, a notification comprising the identification of the  
7 new indicator agent or agents, and

8           - a step for subscribing each synthesis agent to the new indicator agents  
9 required to calculate the indicator of the synthesis agent.

1           17.     A method for scalable monitoring of a computer system according to  
2 claim 14, characterized in that the step for modification of associations comprises:

3           - a step for installing at least one indicator agent in each new resource added to  
4 a subdomain,

5           - a step for sending, to the synthesis agents requiring the value of the indicator  
6 of the new indicator agent or agents, a notification comprising the identification of the  
7 new indicator agent or agents, and

8           - a step for subscribing each synthesis agent to the new indicator agents  
9 required to calculate the indicator of the synthesis agent.

1           18.     A method for scalable monitoring of a computer system according to  
2 claim 15, characterized in that the step for modification of associations comprises:

3           - a step for installing at least one indicator agent in each new resource added to  
4 a subdomain,

5           - a step for sending, to the synthesis agents requiring the value of the indicator  
6 of the new indicator agent or agents, a notification comprising the identification of the  
7 new indicator agent or agents, and

8           - a step for subscribing each synthesis agent to the new indicator agents  
9 required to calculate the indicator of the synthesis agent.

1           19.     A method for scalable monitoring of a computer system according to  
2 claim 13, characterized in that the step for modification of association comprises:

- 3           - a step for selecting, for each subdomain, the resources to be deleted,
- 4           - a step for sending, to the synthesis agents using the value of the indicator of  
5 the indicator agent or agents installed in the selected resource or resources, a  
6 notification comprising the identification of the deleted indicator agent or agents, and
- 7           - a step for unsubscribing the synthesis agents from the indicator agents whose  
8 indications are contained in the notification.

1           20.     A method for scalable monitoring of a computer system according to  
2 claim 14, characterized in that the step for modification of association comprises:

- 3           - a step for selecting, for each subdomain, the resources to be deleted,
- 4           - a step for sending, to the synthesis agents using the value of the indicator of  
5 the indicator agent or agents installed in the selected resource or resources, a  
6 notification comprising the identification of the deleted indicator agent or agents, and
- 7           - a step for unsubscribing the synthesis agents from the indicator agents whose  
8 indications are contained in the notification.

1           21.     A method for scalable monitoring of a computer system according to  
2 claim 15, characterized in that the step for modification of association comprises:

- 3           - a step for selecting, for each subdomain, the resources to be deleted,

4           - a step for sending, to the synthesis agents using the value of the indicator of  
5     the indicator agent or agents installed in the selected resource or resources, a  
6     notification comprising the identification of the deleted indicator agent or agents, and

7           - a step for unsubscribing the synthesis agents from the indicator agents whose  
8     indications are contained in the notification.

1           22.     A method for scalable monitoring of a computer system according to  
2     claim 16, characterized in that the step for modification of association comprises:

3           - a step for selecting, for each subdomain, the resources to be deleted,  
4           - a step for sending, to the synthesis agents using the value of the indicator of  
5     the indicator agent or agents installed in the selected resource or resources, a  
6     notification comprising the identification of the deleted indicator agent or agents, and

7           - a step for unsubscribing the synthesis agents from the indicator agents whose  
8     indications are contained in the notification.

1           23.     A method for scalable monitoring of a computer system according to  
2     claim 17, characterized in that the step for modification of association comprises:

3           - a step for selecting, for each subdomain, the resources to be deleted,  
4           - a step for sending, to the synthesis agents using the value of the indicator of  
5     the indicator agent or agents installed in the selected resource or resources, a  
6     notification comprising the identification of the deleted indicator agent or agents, and

7           - a step for unsubscribing the synthesis agents from the indicator agents whose  
8     indications are contained in the notification.

1           24.     A method for scalable monitoring of a computer system according to  
2 claim 18, characterized in that the step for modification of association comprises:

- 3                 - a step for selecting, for each subdomain, the resources to be deleted,
- 4                 - a step for sending, to the synthesis agents using the value of the indicator of  
5 the indicator agent or agents installed in the selected resource or resources, a  
6 notification comprising the identification of the deleted indicator agent or agents, and
- 7                 - a step for unsubscribing the synthesis agents from the indicator agents whose  
8 indications are contained in the notification.

1           25.     A method for scalable monitoring of a computer system according to  
2 claim 13, further comprising determining the maximum number of resources per  
3 subdomain to minimize the cost of calculating the indicators, or the number of  
4 synthesis nodes.

1           26.     A method for scalable monitoring of a computer system according to  
2 claim 14, further comprising determining the maximum number of resources per  
3 subdomain to minimize the cost of calculating the indicators, or the number of  
4 synthesis nodes is as low as possible.

1           27.     A method for scalable monitoring of a computer system according to  
2 claim 15, further comprising determining the maximum number of resources per  
3 subdomain to minimize the cost of calculating the indicators, or the number of  
4 synthesis nodes is as low as possible.

1           28.     A method for scalable monitoring of a computer system according to  
2 claim 16, further comprising determining the maximum number of resources per

3 subdomain to minimize the cost of calculating the indicators, or the number of  
4 synthesis nodes is as low as possible.

1 29. A method for scalable monitoring of a computer system according to  
2 claim 19, further comprising determining the maximum number of resources per  
3 subdomain to minimize the cost of calculating the indicators, or the number of  
4 synthesis nodes is as low as possible.

1 30. A method for scalable monitoring of a computer system according to  
2 claim 20, further comprising determining the maximum number of resources per  
3 subdomain to minimize the cost of calculating the indicators, or the number of  
4 synthesis nodes is as low as possible.

1 31. A method for scalable monitoring of a computer system according to  
2 claim 21, further comprising determining the maximum number of resources per  
3 subdomain to minimize the cost of calculating the indicators, or the number of  
4 synthesis nodes is as low as possible.

1 32. A method for scalable monitoring of a computer system according to  
2 claim 22, further comprising determining the maximum number of resources per  
3 subdomain to minimize the cost of calculating the indicators, or the number of  
4 synthesis nodes is as low as possible.

1 33. A device for the scalable monitoring of a computer system comprising  
2 a plurality of computer units constituting hardware resources to be monitored and  
3 forming a monitored domain, said resources including memories having stored therein  
4 indicator agents, means for organizing the monitored domain into monitored  
5 subdomains comprising a predetermined maximum number of resources, means for

6 creating and configuring, in a memory of at least one resource, information synthesis  
7 nodes comprising at least one synthesis agent stored in said memory of at least one  
8 resource for synthesizing indicator values calculated and stored in the memory of at  
9 least one resource to define corresponding indicators, said indicators representing an  
10 operational status of the resources of a subdomain and being evaluated by the  
11 indicator agents installed in said resources, each indicator agent being uniquely  
12 identified by the name of the indicator said indicator agent calculates and by the  
13 subdomain in which the indicator agent is installed, the configuration of a synthesis  
14 agent comprising the storage, in the memory of a resource, of the associations  
15 between the synthesis agent and indicator agents, and means for modifying the  
16 associations between the synthesis agents and the indicator agents when the  
17 predetermined maximum number of resources in a subdomain is reached, so that the  
18 new architecture of the monitored domain comprises, in each subdomain, a number of  
19 resources lower than the predetermined maximum number of resources.

1 34. A scalable monitoring device for scalable monitoring of a computer  
2 system according to claim 33, characterized in that the means for configuring a  
3 synthesis node comprise means for searching, in a table stored in the storage means of  
4 a resource, for the name of the indicator agent or agents required to calculate the  
5 indicator of the synthesis agent, and means for subscribing the synthesis agent to the  
6 indicator agents identified by the means for searching; said means for subscribing  
7 allowing each synthesis agent to automatically receive, in a synthesis agent  
8 subscription table stored in the storage means, new values of the indicators found.

1 35. A scalable monitoring device for scalable monitoring of a computer  
2 system according to claim 34, characterized in that the search means comprise means

3 for sending a notification by the synthesis agent to a naming service dedicated to  
4 storing, in a table stored in the memory of a resource, the associations between a  
5 subdomain name, an indicator agent and an indicator, said notification comprising the  
6 name of a given subdomain and a given indicator, and means for the sending a  
7 notification by the naming service to the requesting synthesis agent, of the name of  
8 the indicator agent or agents corresponding to the association of the given subdomain  
9 and the given indicator.

1 36. A scalable monitoring device for scalable monitoring of a computer  
2 system according to claim 33, characterized in that the modification means comprise  
3 means for creating and storing at least one indicator agent in each new resource added  
4 to a subdomain, means for sending, to the synthesis agents requiring the value of the  
5 indicator of the new indicator agent or agents, a notification comprising the  
6 identification of the new indicator agents or agents, and means for subscribing each  
7 synthesis agent to the new indicator agents required to calculate the indicator of the  
8 synthesis agent.

1 37. A scalable monitoring device for scalable monitoring of a computer  
2 system according to claim 34, characterized in that the modification means comprise  
3 means for creating and storing at least one indicator agent in each new resource added  
4 to a subdomain, means for sending, to the synthesis agents requiring the value of the  
5 indicator of the new indicator agent or agents, a notification comprising the  
6 identification of the new indicator agents or agents, and means for subscribing each  
7 synthesis agent to the new indicator agents required to calculate the indicator of the  
8 synthesis agent.

1           38.     A scalable monitoring device for scalable monitoring of a computer  
2     system according to claim 25, characterized in that the modification means comprise  
3     means for creating and storing at least one indicator agent in each new resource added  
4     to a subdomain, means for sending, to the synthesis agents requiring the value of the  
5     indicator of the new indicator agent or agents, a notification comprising the  
6     identification of the new indicator agents or agents, and means for subscribing each  
7     synthesis agent to the new indicator agents required to calculate the indicator of the  
8     synthesis agent.

1           39.     A scalable monitoring device for scalable monitoring of a computer  
2     system according to claim 33, characterized in that the modification means comprise  
3     means for selecting, for each subdomain of the resources to be deleted, means for  
4     sending, to the synthesis agents using the value of the indicator of the indicator agent  
5     or agents installed in the selected resource or resources, a notification comprising the  
6     identification of the deleted indicator agent or agents, and means for unsubscribing  
7     the synthesis agents from the indicator agents whose identifications are contained in  
8     the notification.

1           40.     A scalable monitoring device for scalable monitoring of a computer  
2     system according to claim 34, characterized in that the modification means comprise  
3     means for selecting, for each subdomain of the resources to be deleted, means for  
4     sending, to the synthesis agents using the value of the indicator of the indicator agent  
5     or agents installed in the selected resource or resources, a notification comprising the  
6     identification of the deleted indicator agent or agents, and means for unsubscribing  
7     the synthesis agents from the indicator agents whose identifications are contained in  
8     the notification.



1           41.     A scalable monitoring device for scalable monitoring of a computer  
2     system according to claim 35, characterized in that the modification means comprise  
3     means for selecting, for each subdomain of the resources to be deleted, means for  
4     sending, to the synthesis agents using the value of the indicator of the indicator agent  
5     or agents installed in the selected resource or resources, a notification comprising the  
6     identification of the deleted indicator agent or agents, and means for unsubscribing  
7     the synthesis agents from the indicator agents whose identifications are contained in  
8     the notification.

1           42.     A scalable monitoring device for scalable monitoring of a computer  
2     system according to claim 36, characterized in that the modification means comprise  
3     means for selecting, for each subdomain of the resources to be deleted, means for  
4     sending, to the synthesis agents using the value of the indicator of the indicator agent  
5     or agents installed in the selected resource or resources, a notification comprising the  
6     identification of the deleted indicator agent or agents, and means for unsubscribing  
7     the synthesis agents from the indicator agents whose identifications are contained in  
8     the notification.

1           43.     A scalable monitoring device for scalable monitoring of a computer  
2     system according to claim 33, comprising means for determining the maximum  
3     number of resources per subdomain for minimizing the cost of calculating the  
4     indicators, or the number of synthesis nodes.

1           44.     A scalable monitoring device for scalable monitoring of a computer  
2     system according to claim 36, comprising means for determining the maximum  
3     number of resources per subdomain for minimizing the cost of calculating the  
4     indicators, or the number of synthesis nodes.

1           45.     A scalable monitoring device for scalable monitoring of a computer  
2     system according to claim 39, comprising means for determining the maximum  
3     number of resources per subdomain for minimizing the cost of calculating the  
4     indicators, or the number of synthesis nodes.

**IN THE ABSTRACT:**

Please cancel the Abstract in its entirety and substitute the following new  
Abstract:

--ABSTRACT


The present invention relates to a method and device for the scalable monitoring of a computer system comprising a plurality of computer units constituting hardware resources to be monitored forming a monitored domain, the method being implemented by means of a central computer system called a manager connected to a communication network that allows the transfer of information between at least one resource and the manager. The method comprises a step for organizing the monitored domain into monitored subdomains comprising a predetermined maximum number of resources, and a step for automatically creating and configuring, for each subdomain, an information synthesis node comprising at least one synthesis agent stored in the storage means of a resource. Each synthesis agent is designed to synthesize indicator values calculated and stored in the storage means of at least one resource. These indicators represent an operational status of the resources of the subdomain and are evaluated by indicator agents installed in these resources. Each indicator agent is uniquely identified by the name of the indicator it calculates and by the subdomain in which it is installed, and is associated with each synthesis agent using the corresponding indicator value. A further step allows for modifying the associations between the synthesis agents and the indicator agents when the predetermined maximum number of resources in a subdomain is reached, in order to accommodate the addition or deletion of indicators so that the new architecture of the monitored domain comprises, in each subdomain, a number of resources lower than the predetermined maximum number of resources.--

**REMARKS**

The Preliminary Amendment is made to eliminate informalities in the specification, claims and abstract resulting from a literal translation of the French text, to eliminate the use of multiple dependent claims, which are dependent from other multiple dependent claims and to insert headings as is to conform the application to U.S. practice.

The present application is believed to be in condition for examination, which action is earnestly solicited.

Respectfully submitted,  
MILES & STOCKBRIDGE P.C.

By:   
Edward J. Kondracki  
Registration No. 20,604

MILES & STOCKBRIDGE P.C.  
1751 Pinnacle Drive, Suite 500  
McLean, VA 22102-3833  
703-903-9000

**Marked Up Version of Original Paragraphs In Specification With Markings To  
Show Changes Made To Specification**

Page 1, line 3:

The present invention relates to a method [and device] for the scalable monitoring of a running computer system. The computer system is constituted by a set of computer equipment units called distributed resources, each being interconnected to the others through a communication network.

Page 2, line 7:

- a step for breaking [down] the monitored domain down [or organizing a plurality of] into monitored subdomains [(d1, d2)] comprising a predetermined maximum number of resources, [(A1, A2, B1, B2)]

Page 5, line 7:

- Fig. 2 represents an exemplary architecture of the links between monitoring agents according to the method of the invention[; and]

Page 5, line 8:

- Fig. 3 represents the process for deploying a monitoring method [according to the invention].

Page 5, line 9:

As explained above, a computer system (1) comprises at least one local area network [(LAN)] (10, 20) that communicates with a central system (2) or manager

through a wide area network (3). Each local area network (10, 20) comprises at least one unit of computer equipment (101, 102, 201, 202) called a resource.

Page 7, line 27:

Each indicator agent manages a so-called subscriber list on which the names of other indicator agents according to the invention may be written. This list is stored in the storage means [or memory] of the computer equipment unit associated with the indicator agent, for example in the form of a table (1010, 2010). An indicator agent  $A_1$  is written on this list by sending a specific so-called subscription notification "Subscribe (id( $A_1$ ) Management Information ( $A_1$ ))" to another indicator agent  $B_1$ , which calculates the indicator ( $I_{B1}$ ). This notification includes as parameters a piece of so-called management information that allows the sending agent to create an association between a propagation of a value modification and the other indicator agent ( $B_1$ ), and the identifier  $id(A_1)$ . Upon receiving a subscription notification, the destination agent ( $B_1$ ) processes the notification by writing into the subscriber table (2010) the identifier ( $Id_{A1}$ ) of the sending agent as well as the management information (Management Information ( $A_1$ )) on the list. This list is consulted by the indicator agent ( $B_1$ ) that manages it, after the evaluation of the indicator ( $I_{B1}$ ) by the agent ( $B_1$ ). If the new value of the indicator is different from the value previously evaluated and stored by the agent, then the agent sends each agent written on the subscriber list (2010) and identified by the parameter ( $id(A_1)$ ) a value change notification (ValueChanged) comprising the new value ( $Val(I_{B1})$ ) of the indicator ( $I_{B1}$ ). To do this, after the evaluation of the indicator ( $I_{B1}$ ), a comparison module of the indicator agent ( $B_1$ ) compares the new value of the indicator ( $Val(I_{B1})$ ) to the value previously calculated ( $Valp(I_{B1})$ ) and stored. If the two values are different, the comparison module activates a procedure for sending the value change notification

(ValueChanged) to all of the agents, for example A, written on the subscriber list (2010) then records the new value of the indicator in the storage means of its computer equipment unit. The value change notification comprises as parameters the new value of the indicator ( $Val(I_{B1})$ ) and the management information (Management Information ( $A_1$ )) of the target agent, so that the target agent can assign the value received to the indicator awaited.

Page 18, line 23

It should be clear to those skilled in the art that the present invention allows for embodiments in many other specific forms without going beyond the scope of application of the invention as claimed. Consequently, the present embodiments should be considered as examples, but [which] can be modified within the range defined by the true merit [spirit] of the invention and scope of the [invention as set forth] in the attached claims, and the invention should not be limited to the details given above. [to which resort should be made for a full and complete understanding of the full scope of the invention].



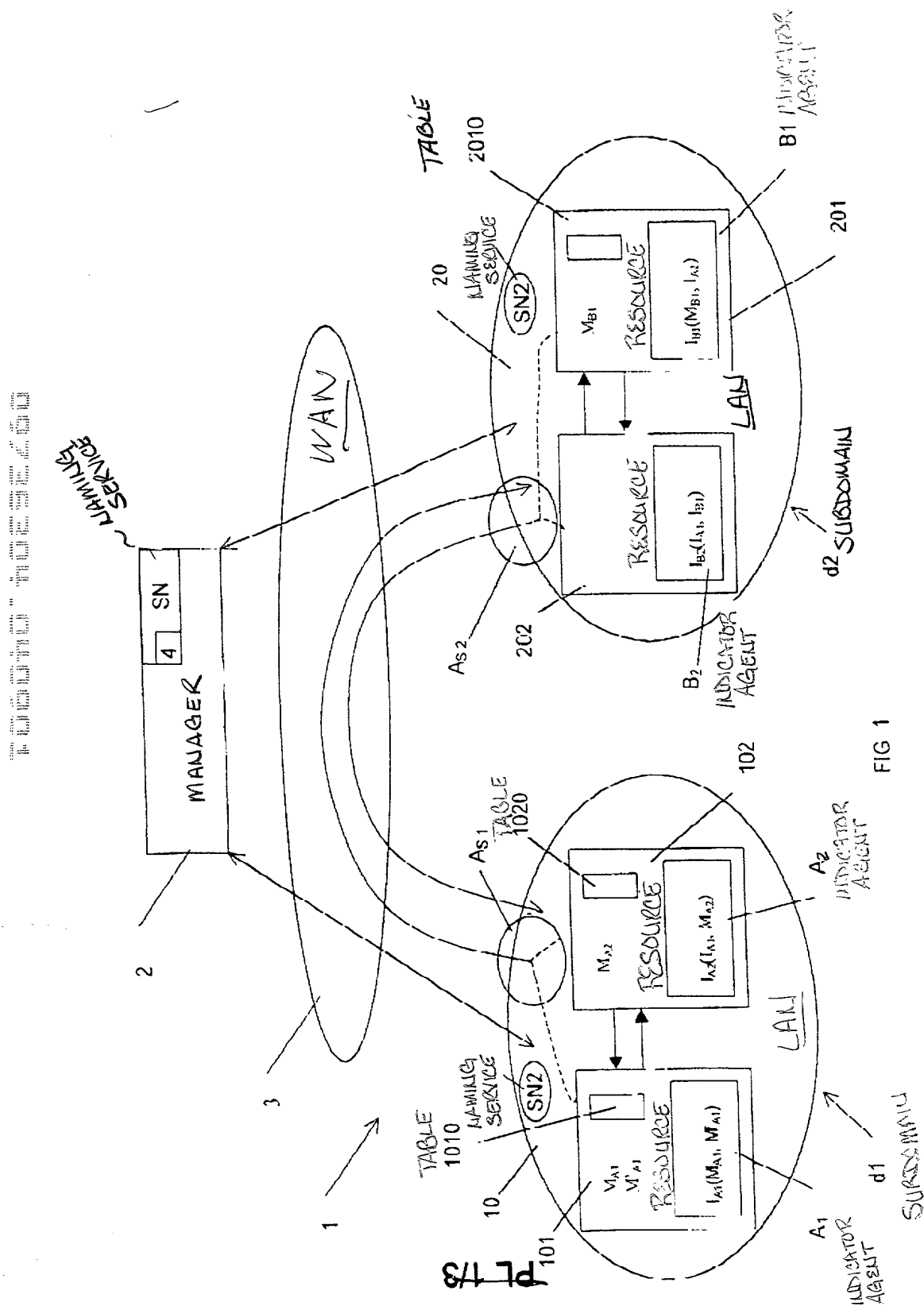
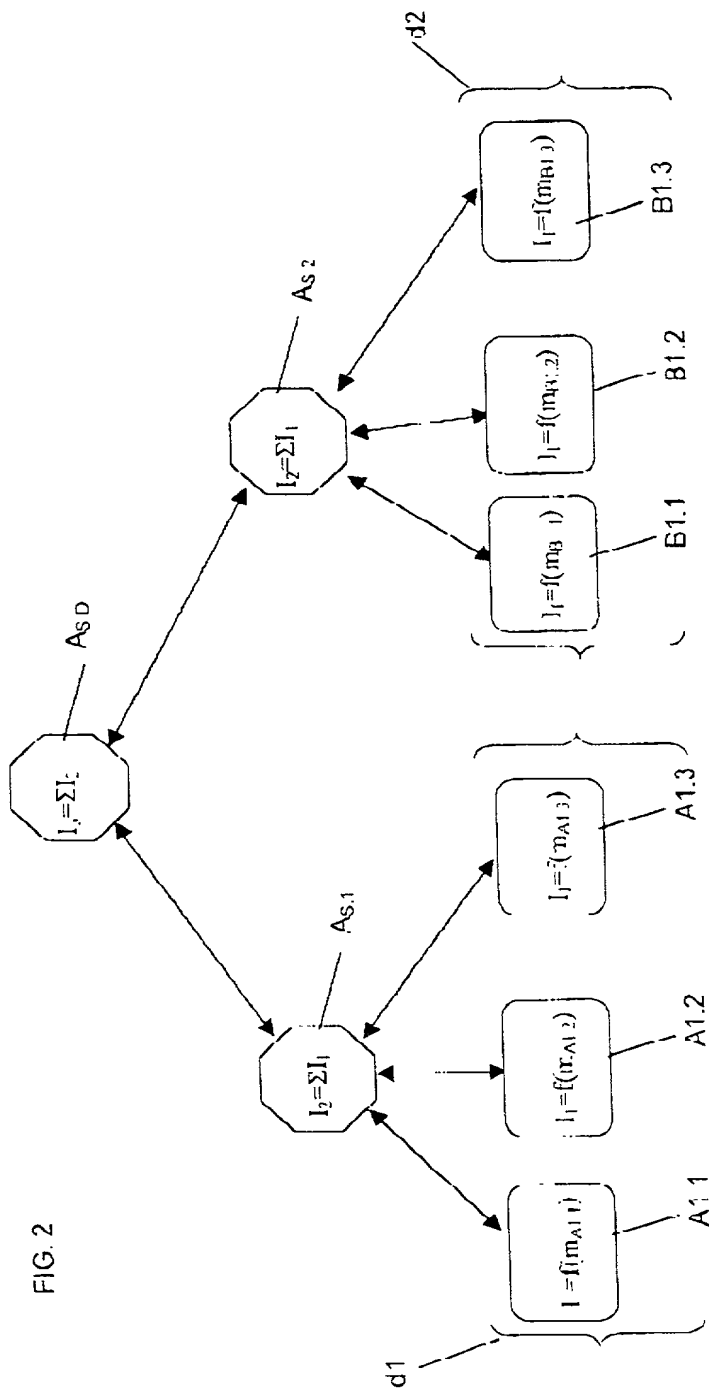


FIG. 2



PL 3/3

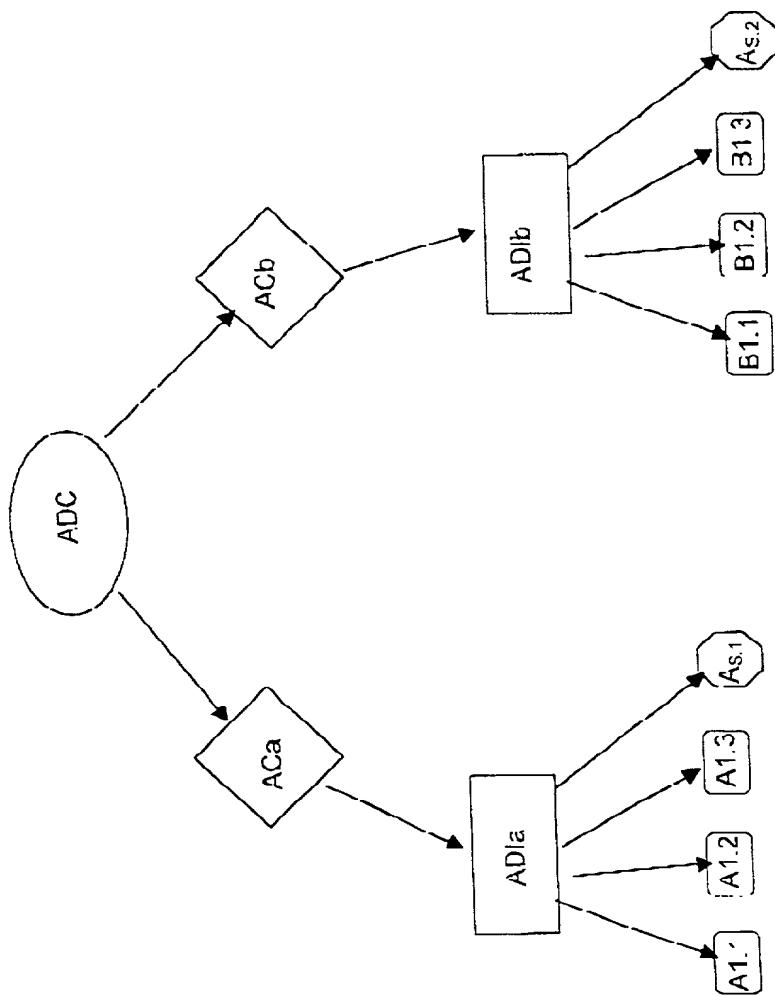


FIG. 3

PL 3/3